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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/048,206	05/07/2002	Russell Vernon Hughes	67056-002	4826
26096	7590	04/07/2004	EXAMINER	
CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009			VAN, QUANG T	
			ART UNIT	PAPER NUMBER
			3742	
			DATE MAILED: 04/07/2004	

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/048,206

Applicant(s)

HUGHES, RUSSELL VERNON

Examiner

Quang T Van

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 49-67 and 69-81 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 49-67 and 69-81 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

***Allowable Subject Matter***

1. The indicated allowability of claims 55-58 is withdrawn in view of the newly discovered reference(s) to Shimdada et al (US 4,162,389). Rejections based on the newly cited reference(s) follow.

***Claim Objections***

2. Claims 75-79 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. In this case, claims 75-79 are depended on claim 68, which already has been cancelled.

NOTE: For purpose of examination, it is presume that claims 75-79 are depend on claim 67.

***Claim Rejections - 35 USC § 102***

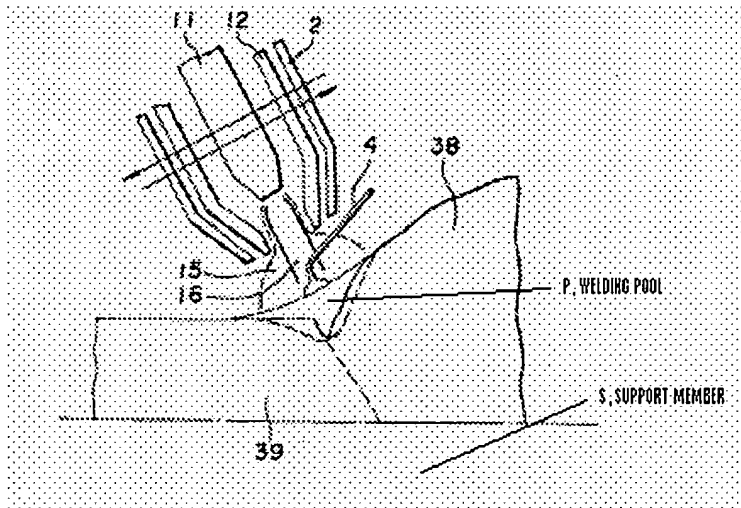
3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 49-50, 52-53, 55-65, 67, 69-73 are rejected under 35 U.S.C. 102(b) as being anticipated by Shimdada et al (US 4,162,389). Shimdada discloses a welding apparatus and method comprising the step of melting said members (38, 39) at a predetermined location to form a weld pool (P, figure below); and disturbing the weld

pool by introducing a disturbing member (4) into the weld pool (P). With regard to claims 55 and 57, Shimdada shows the variable speed of welding rod in table (col. 3, lines 56-65), therefore, it is inherent disclose the step of advancing the disturbing member into the weld pool at a speed of advance and to a predetermined depth, and withdrawing the disturbing member at a speed of withdrawal.



5. Claims 49, 52-53, 55-56, 59, 62, 65 are rejected under 35 U.S.C. 102(b) as being anticipated by Takano et al (US 5,256,856). Takano discloses a welding method for aluminum alloys comprising the step of melting said members (7, 4) at a predetermined location to form a weld pool (6); and disturbing the weld pool by introducing a disturbing member (2,3) into the weld pool (6). With regard claim 55, it is inherent that a welding apparatus when begin welding it has to providing the step of advancing the disturbing member (2, 3) into the weld pool (6) at a speed of advance and to a predetermined depth, and holding the disturbing member in the weld pool during the welding process and withdrawing the disturbing member at a speed of withdrawal in order to finish the welding process.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 75-77 and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimdada et al (US 4,162,389) in view of Nobuaki (JP 60015070) cited by applicant. Shimdada discloses substantially all features of the claimed invention except the support member comprising a support surface having a recess. Nobuaki discloses a support member (5) comprising a support surface having a recess (8a). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Shimdada a support member comprising a support surface having a recess as taught by Nobuaki in order to support the welding materials and a weld pool.

8. Claim 51 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimdada et al (US 4,162,389) in view of Saitou et al (5,591,359) cited by applicant. Shimdada discloses substantially all features of the claimed invention except the step of clamping the overlapping members prior to forming the weld pool. Saitou discloses the step of clamping the overlapping members prior to forming the weld pool (abstract, lines 1-5). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Shimdada the step of clamping the overlapping

members prior to forming the weld pool as taught by Saitou in order to hold the workpieces in place during the welding process.

9. Claims 54 and 74 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimdada et al (US 4,162,389) in view of Kelly (US 6,489,584). Shimdada discloses substantially all features of the claimed invention except the disturbing member is non-consumable. Kelly discloses a disturbing member (72) is non-consumable. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Shimdada a disturbing member is non-consumable as taught by Kelly in order to withstand from the heat of the weld pool.

10. Claim 78 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimdada et al (US 4,162,389) in view of Umeno et al (US 5,449,107) cited by applicant. Shimdada discloses substantially all features of the claimed invention except the supporting member is providing with a cooling system. Umeno discloses a supporting member (11) is providing with a cooling system (12). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Shimdada a supporting member is providing with a cooling system as taught by Umeno in order to reduce the temperature of the support member during welding.

11. Claim 79 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shimdada et al (US 4,162,389) in view of JP 59212169 cited by applicant. Shimdada discloses substantially all features of the claimed invention except the support member has a peripheral raised edge against which the work piece is received. JP59212169 discloses a support member (2) has a peripheral raised edge against which the work

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piece (1, 1') is received. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Shimdada a support member has a peripheral raised edge against which the work piece is received as taught by JP59212169 in order to reduce the transfer of heat from the work piece to the support member during welding.

12. Claims 66 and 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shimdada et al (US 4,162,389) in view of Yoshino (US 5,599,469). Shimdada discloses substantially all features of the claimed invention except the step of disturbing the weld pool includes disturbance by pulsing a welding current of the plasma arc torch. Yoshino discloses the step of disturbing the weld pool includes disturbance by pulsing a welding current of the plasma arc torch (col. 1, lines 54-57). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Shimdada the step of disturbing the weld pool includes disturbance by pulsing a welding current of the plasma arc torch as taught by Yoshino in order to adjust the pulse current for controlling the plasma arc.

***Response to Amendment***

13. Applicant's arguments with respect to claims 49-67 and 69-81 have been considered but are moot in view of the new ground(s) of rejection.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang T Van whose telephone number is 703-306-9162. The examiner can normally be reached on 8:00Am 7:00Pm M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Denise Pothier can be reached on 703-308-0265. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



QV  
March 31, 2004



Quang T Van  
Primary Examiner  
Art Unit 3742